Evaluation of the Fast Neutron Cross Sections of ^{46,47,48,49,50}Ti including complete covariance information

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A new evaluation of all important neutron cross sections of the stable isotopes of Ti was performed in the neutron energy range 0.212 - 20 MeV, that is the whole energy range above the resonance region. The evaluation combines the results of nuclear model calculations and the complete existing experimental data base in order to obtain the most accurate description of the cross sections present within our present knowledge. Results of recent nuclear model calculations and their estimated covariances are used as prior information for all cross sections except sigma-tot. These priors are successively improved by adding experimental data and applying Bayes theorem to obtain the posterior information using the code GLUCS03. The evaluation of the total cross sections is completely based on the accurate experimental data base for Ti-nat covering the whole energy range of the evaluation. This was done also by means of the code GLUCS03 using an uninformative prior. The results of the evaluation, files 3 (cross sections) and 33 (cross section covariances) for all stable isotopes of Ti will be part of new isotopic evaluations for Ti for the Joint European Fission and Fusion (JEFF) file.

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